developed for the National Highway Traffic Safety Administration. (See the Reference section at the end of this document for further information on crash types.)

Emergency room records: Another source of data on bicycle crashes is the hospital emergency room. In several North Carolina communities, hospitals have cooperated with crash researchers to compile data on the number of bicyclists seriously injured in crashes, their ages and sexes, and the general circumstances surrounding the crash. Collecting hospital data is a good way to determine the overall scope of the problem and learn some of the demographic factors of interest. However, hospital records are not generally a good source of detailed information on crash type. Police records are better for this purpose. To learn more about emergency room studies, see the reports listed in the Reference section.

Surveys: Contacting bicycle users is another way to get general information on local crash problems. Such information as the seriousness of injury, general type and location of crash (e.g., bike-bike, bike-car), bicyclist demographics, and time and day of crash may be gathered in this way. In order to accomplish several goals at once, a crash survey may be part of a more general bicycle user survey (see page 7).

Crash study implications: Information gathered through bicycle crash studies can help structure an agency's bicycle program in several ways. The two most important topics for analysis are as follows:

Bicycle crash locations: Through the three approaches listed above, it is possible to develop a map of bicycle crash locations. These locations should be investigated to identify any physical hazards which may contribute to accidents.

Behavioral factors: Bicyclist and motorist behavioral problems are the leading factors in most crashes. The studies may help isolate key errors, which may become the focus of education and public awareness programs.

Environmental conditions inventory:

In order to plan effectively for bicycle use, it is important to gain a detailed understanding of local environmental conditions. Local bicycle clubs may be a good source of information when inventorying local bicycle conditions.

Developing a map or set of maps of such conditions is a key ingredient in the bicycle planning process. The most important conditions fall into three main categories: barriers, hazards and bicycle traffic generators. Because locating these features can be a time-consuming and staff-intensive process, it is best to solicit information from the community. There are several ways to accomplish this goal.

Volunteer recruitment: A relatively small group of cycling volunteers can help conduct an environmental conditions inventory. By breaking the community into districts and giving a map of each one to a volunteer, one can make the task more manageable. Volunteers should use the lists of barriers and hazards on the following pages and should be briefed, as a group, on how to record their observations.

Public meetings: A series of public meetings can help staff identify key problems. By bringing a set of maps and encouraging attendees to note barriers or hazards of greatest concern, it is possible to collect a lot of data in a short period of time. Another approach is to attend regularly scheduled meetings of neighborhood associations. These may not bring in as much bicycling expertise as specially scheduled bike meetings, however.

Hang tags and postcards: In some communities, bicyclists are encouraged to note barriers or hazards on mailback postcards distributed through bicycle shops and other high-traffic locations. In other cases, hang tag surveys are hung from bike handlebars and cyclists are encouraged to send these back.

Surveys: See *User Surveys* (page 7) for information concerning how to conduct a survey.